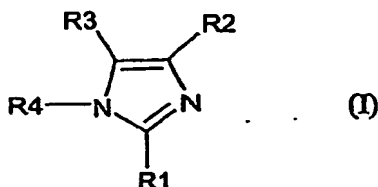


THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. A compound having structural formula (I):



wherein:

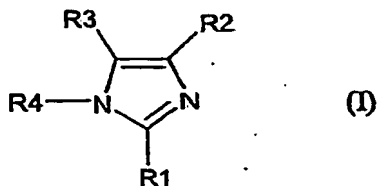
R1 is aryl, or substituted aryl;

R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl and

R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano,

for use as an anti-microbial agent, wherein said compound has anti-microbial activity.

2. A compound having structural formula (I):



wherein:

R1 is heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl;

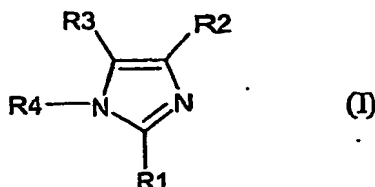
R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl, and

R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

for use as an anti-microbial agent, wherein said compound has anti-microbial activity;

with the proviso that when R1 is 3-indolyl or substituted 3-indolyl, and R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl then said compound is for use as an anti-fungal agent.

3. The compound according to claim 1 or 2, wherein said anti-microbial agent is for the treatment or prevention of a microbial infection in an animal in need thereof.
4. The compound according to claim 1 or 2, wherein said anti-microbial agent is formulated for incorporation into a cosmetic product, personal care product, cleanser, polish, paint, spray, soap, or detergent.
5. A compound having structural formula (I), or a salt thereof.



wherein:

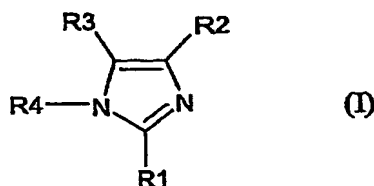
R1 is aryl, or substituted aryl;

R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl, and

R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

for use in the treatment or prevention of a microbial infection, wherein said microbial infection is a bacterial or fungal infection and said compound has anti-bacterial and/or anti-fungal activity.

6. A compound having structural formula (I), or a salt thereof:



wherein:

R1 is heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl;

R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl, and

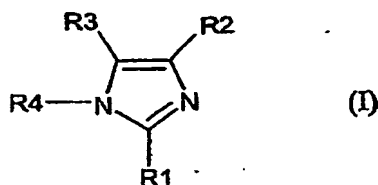
R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

for use in the treatment or prevention of a microbial infection, wherein said microbial infection is a bacterial or fungal infection and said compound has anti-bacterial and/or anti-fungal activity;

with the proviso that when R1 is 3-indolyl or substituted 3-indolyl, and R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl then said microbial infection is a fungal infection.

7. The compound according to claim 5 or 6, wherein said microbial infection is associated with a disease or disorder.
8. The compound according to any one of claims 5, 6, or 7, wherein said compound of structural formula I is used in combination with one or more anti-microbial agent(s).
9. The compound according to any one of claims 5, 6 or 7, wherein said microbial infection is a bacterial infection.
10. The compound according to any one of claims 5, 6 or 7, wherein said microbial infection is a fungal infection.

11. The compound according to claim 9, wherein said bacterial infection is a *Corynebacterium xerosis*, *Chlamydia pneumoniae*, *Chlamydia trachomatis*, *Enterobacter cloacae*, *Enterobacter faecalis*, *Enterococcus faecium*, *Escherichia coli*, *Escherichia coli* O157:H7, *Haemophilus influenzae*, *Helicobacter pylori*, *Listeria monocytogenes*, *Moraxella catarrhalis*, *Neisseria gonorrhoeae*, *Neisseria meningitidis*, *Pseudomonas aeruginosa*, *Pneumococci* species, *Salmonella enterica*, *Salmonella typhimurium*, *Staphylococcus aureus*, *Staphylococcus aureus* K147, *Staphylococcus epidermidis*, *Staphylococcus typhimurium*, *Streptococcus mitis*, *Streptococcus pneumoniae*, *Streptococcus pyogenes*, *Vibrio cholerae*, *Mycobacterium tuberculosis*, *Mycobacterium africanum*, *Mycobacterium avium-intracellulare*, *Mycobacterium pneumoniae*, *Mycobacterium bovis*, *Mycobacterium leprae*, *Mycobacterium phlei* or *Bacillus anthracis* infection:
12. The compound according to claim 10, wherein said fungal infection is a *Histoplasma*, *Coccidioides*, *Blastomyces*, *Paracoccidioides*, *Cryptococcus*, *Aspergillus*, *Zygomycetes*, *Basidiobolus*, *Conidiobolus*, *Rhizopus*, *Mucor*, *Absidia*, *Mortierella*, *Cunninghamella*, *Saksenaea*, *Candida*, *Cryptosporidium parvum*, *Sporothrix schenckii*, *Piedraia hortae*, *Trichosporon beigeli*, *Malassezia furfur*, *Phialophora verrucosa*, *Fonsecae pedrosoi*, *Madurella mycetomatis* or *Pneumocystis carinii* infection.
13. Use of one or more compounds having structural formula (I), or a salt thereof, in the preparation of an anti-microbial composition:



wherein:

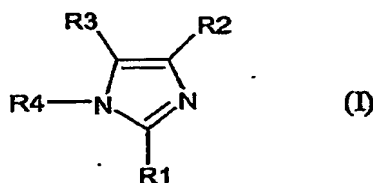
R1 is aryl, or substituted aryl;

R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl and

R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

wherein said anti-microbial composition is an anti-bacterial or anti-fungal composition and said one or more compounds have anti-bacterial and/or anti-fungal activity.

14. Use of one or more compounds having structural formula (I), or a salt thereof, in the preparation of an anti-microbial composition:



wherein:

R1 is heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl;

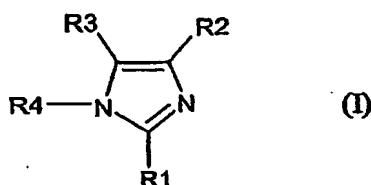
R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl and

R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

wherein said anti-microbial composition is an anti-bacterial or anti-fungal composition and said one or more compounds have anti-bacterial and/or anti-fungal activity;

with the proviso that when R1 is 3-indolyl or substituted 3-indolyl, and R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl, then said anti-microbial composition is an anti-fungal composition.

15. The use according to claim 14, wherein said anti-microbial composition further comprises one or more anti-microbial agent(s).
16. A method of inhibiting the growth and/or proliferation of a microbial cell comprising contacting said microbial cell with an effective amount of one or more compounds having general formula (I), or a salt thereof:



wherein:

R1 is aryl, or substituted aryl;

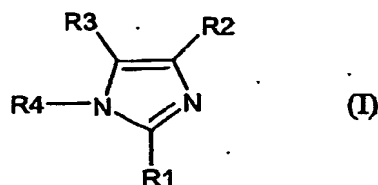
R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl,

substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl, and

R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

wherein said one or more compounds have anti-microbial activity.

17. A method of inhibiting the growth and/or proliferation of a microbial cell comprising contacting said microbial cell with an effective amount of one or more compounds having general formula (I), or a salt thereof:



wherein:

R1 is heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl;

R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl, and

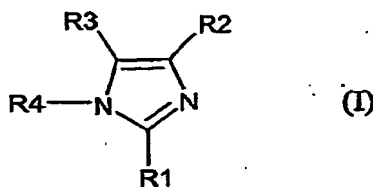
R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted

heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

wherein said one or more compounds have anti-microbial activity;

with the proviso that when R1 is 3-indolyl or substituted 3-indolyl, and R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl, then said microbial cell is a fungal cell.

18. The method according to claim 16 or 17, further comprising contacting said cell with one or more anti-microbial agent(s).
19. The method according to any one of claims 16, 17 or 18, wherein said microbial cell is a bacterial cell and said one or more compounds have anti-bacterial activity.
20. The method according to any one of claims 16, 17 or 18, wherein said microbial cell is a fungal cell and said one or more compounds have anti-fungal activity.
21. An anti-microbial composition comprising an effective amount of one or more compounds having structural formula (I), or a salt thereof, and a carrier, diluent or excipient:



wherein:

R1 is aryl, or substituted aryl;

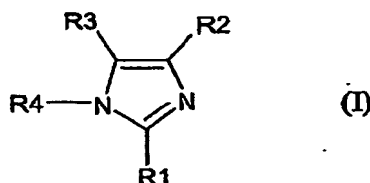
R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken

together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl, and

R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

wherein said anti-microbial composition is an anti-bacterial or anti-fungal composition and said one or more compounds have anti-bacterial and/or anti-fungal activity.

22. An anti-microbial composition comprising an effective amount of one or more compounds having structural formula (I), or a salt thereof, and a carrier, diluent or excipient:



wherein:

R1 is heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl;

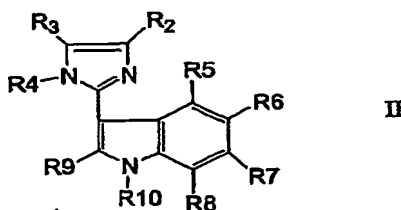
R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl or R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl, and

R4 is hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

wherein said anti-microbial composition is an anti-bacterial or anti-fungal composition and said one or more compounds have anti-bacterial and/or anti-fungal activity;

with the proviso that when R1 is 3-indolyl or substituted 3-indolyl, and R2 and R3 when taken together along with the carbon atoms they are attached to, form aryl, substituted aryl, heterocycle, substituted heterocycle, heteroaryl, or substituted heteroaryl, then said anti-microbial composition is an anti-fungal composition.

23. A compound having the structural formula:



or a salt thereof, wherein:

R2 and R3 are independently aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, or substituted heteroaryl;

R4, R5, R6, R7, R8 and R9 are independently selected from hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted

82-1
83-

Empf.zeit:20/08/2004 21:22

Empf.nr.:290 P.013

ART 34 AMDT

AMENDED SHEET

20-08-2004

heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

R10 is H, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, acyl, -CH₂-aryl, -CH₂-heteroaryl;

with the proviso that the compounds are other than:

3,3'-[5-(4-methoxyphenyl)-1H-imidazole-2,4-diyl]bis-1H-indole;

4,5-Bis(4-methoxyphenyl)-2-(3-indolyl)imidazole;

3-(4,5-diphenyl-1H-imidazol-2-yl)-1-methyl-1H-indole;

3-[4-(4-chlorophenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;

3-[4-(4-bromophenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;

3-[4-(4-methylphenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;

3-[4-(4-methoxyphenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;

3-[4-(4-ethoxyphenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;

3-[4,5-bis(4-methoxydiphenyl)-1H-imidazol-2-yl]-1-methyl-1H-indole;

4,4'-[2-(2-phenyl-1H-indol-3-yl)-1H-imidazole-4,5-diyl]bis[N,N-dimethyl]benzenamine;

4,4'-[2-(5-chloro-1H-indol-3-yl)-1H-imidazole-4,5-diyl]bis[N,N-dimethyl]benzenamine;

2-(3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;

2-(3-indolyl)-4,5-bis[4-(diethylamino)phenyl]imidazole;

2-(2-phenyl-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;

2-(2-chloro-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;

2-(2-ethylcarboxylate-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;

2-(5-chloro-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;

2-(5-cyano-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;

2-(5-nitro-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;

2-(5-ethylcarboxylate-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;

and

when R4 to R9 are H, and R10 is CH₃, then R2 and R3 are not both phenyl substituted at para position with -CH=CH-COOH or -CH=CH-COO-*t*-Bu.

82-2
84

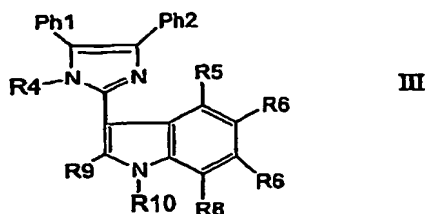
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Empf.nr.: 290 P.014

ART 34 AMDT

AMENDED SHEET

24. A compound having the structural formula:



or a salt thereof, wherein:

Ph1 and Ph2 are independently selected from phenyl and substituted phenyl;
R4, R5, R6, R7, R8 and R9 are independently selected from hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

R10 is H, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, acyl;

with the proviso that the compounds are other than:

- 4,5-Bis(4-methoxyphenyl)-2-(3-indolyl)imidazole;
- 3-(4,5-diphenyl-1H-imidazol-2-yl)-1-methyl-1H-indole;
- 3-[4-(4-chlorophenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;
- 3-[4-(4-bromophenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;
- 3-[4-(4-methylphenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;
- 3-[4-(4-methoxyphenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;
- 3-[4-(4-ethoxyphenyl)-5-phenyl-1H-imidazol-2-yl]-1-methyl-1H-indole;
- 3-[4,5-bis (4-methoxydiphenyl)-1H-imidazol-2-yl]-1-methyl-1H-indole;
- 4,4'-[2-(2-phenyl-1H-indol-3-yl)-1H-imidazole-4,5-diyl]bis[N,N-dimethyl]benzenamine;
- 4,4'-[2-(5-chloro-1H-indol-3-yl)-1H-imidazole-4,5-diyl]bis[N,N-dimethyl]benzenamine;

82-3
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Empf.zeit:20/08/2004 21:22

Empf.nr.:290 P.015

ART 34 AMDT

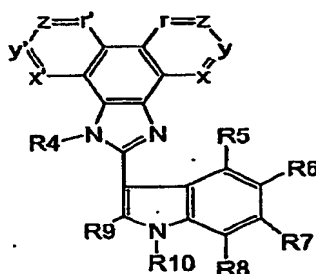
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20-08-2004

2-(3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;
 2-(3-indolyl)-4,5-bis[4-(diethylamino)phenyl]imidazole;
 2-(2-phenyl-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;
 2-(2-chloro-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;
 2-(2-ethylcarboxylate-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;
 2-(5-chloro-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;
 2-(5-cyano-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;
 2-(5-nitro-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;
 2-(5-ethylcarboxylate-3-indolyl)-4,5-bis[4-(dimethylamino)phenyl]imidazole;
 and

when R4 to R9 are H, and R10 is CH₃, then Ph1 and Ph2 are not both phenyl substituted at para position with -CH=CH-COOH or -CH=CH-COO-*t*-Bu.

25. A compound having the structural formula:



VI

or a salt thereof, wherein:

R4, R5, R6, R7, R8 and R9 are independently selected from hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl, substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

82-4
-86

Empf.zeit:20/08/2004 21:23

Empf.nr.:290 P.016

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AMENDED SHEET

R10 is H, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, acyl;

x is CR11 or N;

y is CR12 or N;

z is CR13 or N;

r is CR14 or N;

x' is CR15 or N;

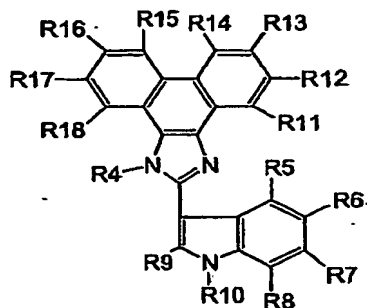
y' is CR16 or N;

z' is CR17 or N;

x' is CR18 or N;

R11, R12, R13, R14, R15, R16, R17 and R18 are independently selected from hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, alkenyl, alkenyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano.

26. A compound having the structural formula:



VII

or a salt thereof, wherein:

R4, R5, R6, R7, R8 and R9 are independently selected from hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, lower alkenyl,

82-5
87

Empf.zeit:20/08/2004 21:23

Empf.nr.:290 P.017

ART 34 AMDT

AMENDED SHEET

substituted lower alkenyl, lower alkynyl, substituted lower alkynyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano;

R10 is H, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, heteroaryl, substituted heteroaryl, acyl;

R11, R12, R13, R14, R15, R16, R17 and R18 are independently selected from hydrogen, halogen, hydroxyl, thiol, lower alkyl, substituted lower alkyl, alkenyl, alkenyl, alkylalkenyl, alkyl alkynyl, alkoxy, alkylthio, acyl, aryloxy, amino, amido, carboxyl, aryl, substituted aryl, heterocycle, heteroaryl, substituted heterocycle, heteroalkyl, cycloalkyl, substituted cycloalkyl, alkylcycloalkyl, alkylcycloheteroalkyl, nitro, or cyano.

27. The compound according to any one of claims 1 to 12, wherein said compound is used in combination with one or more compounds of formula (I).

82-6
88

Empf.zeit: 20/08/2004 21:23

Empf.nr.: 290 P.018

APT 34 AMDT

AMENDED SHEET

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